

1 APPARATUS FOR SHARP IMPLEMENT TRANSFER,
2 COUNTING AND TEMPORARY DISPOSAL OR STORAGE

3 This application is a continuation-in-part of
4 application Serial No. 09/847,969, filed May 2, 2001,
5 which application claims the priority of U.S. Provisional
6 Application No. 60/203,363, filed May 10, 2000.

7 DESCRIPTION

8 TECHNICAL FIELD

9 The invention relates to an improved design for a
10 container which is a health care safety product designed
11 to help protect against accidental injury during the
12 passage of sharp instruments; i.e., suture needles and
13 scalpels within the performance of any surgical
14 procedure. It does not involve direct patient contact.

15 BACKGROUND OF THE INVENTION

16 There are approximately 500,000 to 800,000 needle
17 stick injuries reported each year regarding healthcare
18 professionals in the United States. Other than in the
19 patient's room, these accidents occur most often in the
20 operating room. As a result of this significant health
21 hazard, health device manufacturers have developed
22 various products designed to protect healthcare
23 professionals. These items include retractable syringes,
24 "sharps" containers, syringe covers, syringe guards, etc.
25 While needle sticks associated with syringes account for
26 an
27 estimated 75% of the problem, it is estimated that most
28 of the remaining 25% are the result of sticks associated
29 with suturing during surgical procedures or during the
30 unprotected passing of these sharps. It is this niche
31 which has not been adequately addressed by suture
32 manufacturers who have left it up to the discretion of
33 the end user to provide their own protection.

1 The Occupational Safety & Health Administration
2 (OSHA) in directive #CPL2-2.44D, issued Nov. 5, 1999
3 mandated a change in the Federal Blood Borne Pathogens
4 Act. They called for a shift in work practice controls
5 and issued a call for engineering solutions for use when
6 sharps are passed from one individual to another. The
7 Act states, "The employer must use engineering and work
8 practice controls to eliminate occupational exposure or
9 reduce it to the lowest feasible extent." Further, they
10 specifically called for the elimination of "hand-to-hand"
11 or direct passing of all sharps. The overall goal is to
12 reduce the risk of accidental needle or scalpel injuries
13 during this process.

14 Additionally, they issued four engineering design
15 requirements which include:

16 (1) A thick safety feature that provides a barrier
17 between the hands and needle after use. The safety
18 feature should allow or require the worker's hands to
19 remain behind the needle at all times;

20 (2) The safety feature is an integral part of the
21 device and not an accessory;

22 (3) The safety feature is in effect before
23 disassembly and remains in effect after disposal to
24 protect users and trash handlers; and

25 (4) The safety feature is as simple as possible,
26 requiring little or no training to use effectively.

27 The apparatus of the present invention is designed
28 to meet all of OSHA's design requirements while remaining
29 user friendly and without the incorporation of new hand
30 movements during an operation. It is compact, hand-held,
31 and functions for both suture needles of all sizes as
32 well as scalpels. Additionally, it functions as a safe
33 return device (i.e., passing of sharps occurs in two
34 directions). Moreover, it acts as a counting device for
35 needles and also functions as a temporary storage and/or

1 disposable container for used suture needles and
2 scalpels. Known efforts to date have been focused on
3 prevention of syringe needle sticks with retractable
4 syringes. Simple guard type devices are also available
5 for some scalpels. No other multi-functional yet simple
6 device for use with suture needles and scalpels that also
7 satisfies the new OSHA requirements is known.

8 The Prior Art fails to recognize the value in
9 coupling slots for use with sharp implements which
10 effectively immobilize the sharp implement for transfer
11 purposes, coupled with a magnetically enhanced disposal
12 compartment for easy counting and disposal. By using the
13 novel design of the present invention, coupled with the
14 new system arrangement of the essential elements of the
15 invention, a more flexible configuration is shown which
16 overcomes the inherent limitations of the teachings of
17 the Prior Art as well as permitting a wider range of
18 applications, not permitted with the presently available
19 systems.

20 SUMMARY OF THE INVENTION

21 The invention eliminates many of the inherent
22 limitations of the Prior Art by designing an apparatus
23 which, in one embodiment, is composed of a rectangular
24 box of clear plastic with approximately half of the box
25 top open. Magnets are embedded within to secure the
26 needle mounted in a special slot. A sliding door on the
27 top half holds sharps (i.e. used suture needles and
28 scalpel blades). The scalpel anchors are similarly
29 embedded and designed to cover the scalpel itself while
30 exposing only the handle. In this preferred embodiment,
31 it is designed for single use, although reusable versions
32 are contemplated.

33 It is an object of this invention to provide an
34 apparatus which is designed to meet all of OSHA's new

1 regulations, be hand-held and compact, with dual
2 functions for both suture needles as well as scalpels.

3 These and other objects of this invention will be
4 evident when viewed in light of the drawings, detailed
5 description, and appended claims.

6 BRIEF DESCRIPTION OF THE DRAWINGS

7 The invention may take physical form in certain
8 parts and arrangements of parts, a preferred embodiment
9 of which will be described in detail in the specification
10 and illustrated in the accompanying drawings which form a
11 part hereof, and wherein:

12 FIG. 1 is a top view of the apparatus comprising
13 this invention showing a sliding door in a partially open
14 position;

15 FIG. 2 is a side elevational view of the apparatus
16 shown in FIG. 1;

17 FIG. 3 is a cross-sectional view as may be taken at
18 the line 3-3 in FIG;
19 2;

20 FIG. 4 is a top view of the sliding door;

21 FIG. 5 is an enlarged cross-sectional view of the
22 door shown in FIG. 4 as taken at the line 5-5 thereof;

23 FIG. 6 is a cross-sectional view taken at the line
24 6-6 in FIG. 2 and showing an alternative configuration
25 for a wall which divides the two compartments of the
26 apparatus;

27 FIG. 7 is a perspective view of the main body of a
28 second version of a sharp instrument handling device
29 shown with its cover open;

30 FIG. 8 is a perspective view of a bottom side of the
31 device of FIG. 7;

32 FIG. 9 is a plan view of the device of FIG. 7 shown
33 with the cover open and with a magnetic sheet including a
34 counting grid within a closable container portion of the

1 body and a magnetic sheet on a forward or proximal end of
2 the device;

3 FIG. 10 is a side elevational view of the device of
4 FIG. 7;

5 FIG. 11 is a perspective view of the device of FIG.
6 7 in a hand-held orientation and carrying a scalpel for
7 presentation to a surgeon; and

8 FIG. 12 is a perspective view of the bottom side of
9 the device carrying a suture pack.

10 DETAILED DESCRIPTION OF THE INVENTION

11 Referring now to the drawings wherein the showings
12 are for purposes of illustrating the preferred embodiment
13 of the invention only and not for purposes of limiting
14 the same, the Figures show the apparatus for sharp
15 implement transfer, counting and temporary disposal or
16 storage of the present invention.

17 This device is hand-held and at least partially
18 constructed of clear plastic with embedded magnets. The
19 chosen material of construction must be capable of
20 withstanding a sterilization environment, although in one
21 embodiment, it will only be used once. Traditionally,
22 suture needles, scalpels and other sharps are passed
23 "hand-to-hand" or directly from assistant to surgeon. As
24 an

25 example, in the course of an operation, the passing of
26 sharps occurs in the following steps. The assistant
27 removes the needle from the sterile package and mounts
28 the needle on a needle holder. The needle is exposed.
29 The assistant then "passes" the needle and holder to the
30 surgeon using direct, hand-to-hand technique. The
31 surgeon, when completed, then passes the needle back to
32 the assistant. Again, the needle/scalpel remains exposed
33 at all times during this process.

1 The needle escort provides protection during each
2 step of the above procedures. First, the assistant uses
3 a needle holder to mount the needle within the protective
4 escort device. Secondly, the needle escort device is
5 passed with the hands behind the needle, as specified in
6 OSHA requirements. The only way for the surgeon to
7 access the needle is with a needle holder, not with the
8 use of hands or fingers. When complete, the surgeon
9 disposes the needle in the top retractably sealable box
10 where the used needle remains until the end of the case,
11 at which time all needles are easily counted and the
12 entire device is properly disposed of, in a permanent
13 fashion, in an appropriate permanent sharps disposal
14 container. The needle escort is unique in that it
15 incorporates protection without being cumbersome. It is
16 lightweight and disposable. It is designed for both
17 forward and backward passing of instruments and
18 eliminates direct hand-to-hand passing and exposure
19 during the above process.

20 As seen in FIGS. 1 and 2, the apparatus 10 comprises
21 a two-compartment system in which sterilized sharp
22 implements are removably positionable for suturing use in
23 exposed holding and handling receptacle 12 and sharp
24 implements for either storage or subsequent disposal are
25 placed in sealable disposal and storage compartment 14.
26 The apparatus has a pair of longitudinal side walls 16, a
27 pair of end walls 34,36, a floor 50, and in a preferred
28 embodiment, an inner wall 18 which separates the holding
29 and handling receptacle 12 from the disposal and storage
30 compartment 14.

31 As illustrated in FIGS. 1 and 3, the holding and
32 handling receptacle 12 comprises a pair of longitudinal
33 side walls 16, floor 50, inner wall 18, which in a
34 preferred embodiment is shared with adjacent disposal and
35 storage compartment 14, and exterior receptacle end wall

1 36. In one embodiment of the invention end wall 36 is
2 discontinuous at three locations, although this number
3 could be increased or decreased, and optionally,
4 eliminated. As evidenced in FIG. 1, a pair of slots 44
5 are shown in spaced apart relationship to each other and
6 positioned toward longitudinal side walls 16. These
7 openings are available for scalpel insertion and holding
8 when passed from a physician's assistant to a physician.
9 In a preferred embodiment, a third opening 52 is present
10 which in cooperation with V-shaped notch 24 in floor 50
11 facilitates linkage with suture material, i.e., thread
12 which is held in engagement with the apparatus 10 through
13 suture card (not shown) which is secured via opposed
14 rails 26.

15 As illustrated in FIGS. 1 and 6, the sealable
16 disposal and storage compartment 14 comprises a pair of
17 longitudinal side walls 16, a floor 50, an inner wall 18,
18 which in a preferred embodiment is shared with adjacent
19 holding and handling receptacle 12, and exterior
20 compartment end wall 34. The end wall is slightly
21 lowered in comparison to side walls 16 to accommodate
22 sliding engagement of a securely fastenable covering
23 device 20, which for safety purposes, prevents the sharp
24 implement from falling out of the apparatus when it is
25 positioned in a manner other than laying flat on a
26 horizontal surface. In a preferred embodiment, this
27 covering device 20 will be slidably positionable via
28 grooves 22 inside exterior walls 16 of disposal and
29 storage compartment 14 and commonly shared interior wall
30 18. The longitudinal side walls 16 preferably have an
31 indentation 28 contained at approximately the mid-point
32 along the length to accommodate holding the apparatus
33 between a thumb and a finger of a user.

34 In order to securely position the sharp implements
35 and/or needles, a pair of magnets 46 are securely

1 positioned on floor 50 adjacent end wall 36 of holding
2 and handling receptacle 12. For disposal, at least one
3 magnet 38 is positioned in disposal and storage
4 compartment 14 for securing the sharp implements prior to
5 closing of the receptacle by cover member 20.
6 Optionally, as best illustrated in FIG. 4, the covering
7 device will have a pair of laterally extending hooks 30
8 for stop positioning of the cover member 20 against
9 longitudinal side walls 16 and a protruding lip 40 along
10 two longitudinal sides and one interior side of the cover
11 member for insertion into grooves 22 on the interior of
12 longitudinal side walls 16 of disposal and holding
13 compartment 14. For ease of movement, a plurality of
14 grooves 32 are either molded as raised edges or cut into
15 cover member 20. In a preferred embodiment, a first
16 raised ridge 42a as best seen in FIG. 5, is molded into
17 cover member 20 on the under side for ensuring secure
18 engagement with an interior side of lowered end wall 34
19 of the disposal and holding compartment 14 of cover
20 member 20. Additionally, a second raised ridge 42b is
21 shown positioned interiorly of first raised ridge 42a to
22 minimize the possibility of cover member 20 falling to
23 the floor upon lateral peripheral movement by a user
24 effected to opening the cover member.

25 As seen in FIG. 3, a pair of openings 44 in exterior
26 receptacle end wall 36 permit insertion of scalpel blades
27 with associated grooved handles, said handle grooves
28 typically being normal to the longitudinal axis of the
29 scalpel and dimensioned so as to frictionally fit into
30 openings 44 in end wall 36. In one embodiment of this
31 invention, foam or flexible inserts 48 are positioned
32 within opening 44 so as to accommodate differently sized
33 scalpel handles.

34 When the device is being used in association with
35 suture materials (not shown), typically provided in

1 sterile elongated packaging dimensioned so as to be
2 frictionally positionable within inwardly directed legs
3 26 after removal of the packing material, the sterilized
4 needle with suture material threadably attached, is
5 positioned using a needle holder onto magnets 46 with
6 suture material passing through notch 24 in floor 50.
7 After the threaded needle has been positioned onto
8 magnets 46, the needle holder is disengaged from the
9 needle and apparatus 10 held in a forward facing position
10 exposed to the physician or suture technician. After
11 passing, the needle is reattached to the needle holder
12 for use by the physician or suture technician. After
13 the closure. Upon completion of the closure, the needle
14 is deposited onto magnet 38 in the disposal and holding
15 compartment 14 after opening of securedly refastenable
16 lid 20, followed by disengagement of the needle holder
17 and closure of lid 20.

18 While securedly refastenable lid 20 has been
19 described so far as a slidably repositionable device with
20 a ridge which is guided by a groove in the disposal and
21 holding compartment 14, there is no need to limit it to
22 such. One of the key considerations is the degree of
23 integrity of the closure coupled with the magnet which is
24 positioned along at least a portion of the bottom of the
25 compartment. Alternative lid configurations could
26 include, a hinged arrangement with frictional snap fit
27 characteristics. Yet further embodiments, include
28 encasing the magnet into either the floor of the
29 compartments or in separable plastic inserts dimensioned
30 so as to be positionable within either one or both of the
31 compartments. This is anticipated to be helpful when the
32 device is intended for multiple uses, and sterilized
33 multiple times.
34 In light of the sterilization requirement, it is
35 important that any plastic which is employed to

1 manufacture the apparatus be capable of withstanding
2 sterilization environments. Typical of sterilizable
3 polymers would include the following non-limiting
4 examples: poly(meth)acrylics, e.g., poly(meth)acrylic
5 acids and esters thereof, e.g., poly(meth)acrylates,
6 polyamides such as nylon, polyesters and polyolefins such
7 as polyethylene, including ultra high molecular weight
8 polyethylene and crosslinked polyethylenes or
9 polypropylene, polyetherimides, acetal copolymers,
10 polyethersulfones, polyarylethersulfones, polysulfones,
11 PPO (polyphenylene oxide & styrene), polystyrenes,
12 polycarbonates, and ABS (acrylonitrile butadiene
13 styrene).

14 In order to implement the OSHA directives, it is
15 important that cover member 20 be transparent or
16 translucent so as to enable counting of the sharps
17 contained within disposal and holding compartment 14.
18 Other structural members of the apparatus need not have
19 either the transparent or translucent characteristic.

20 FIGS. 7 - 12 illustrate another version of a sharp
21 surgical instrument handling device 55 constructed in
22 accordance with the invention. The main part of the
23 device 55 comprises a one-piece or unitary injection
24 molded body 56. The body 56 is formed of a suitable
25 thermoplastic such as polypropylene with various thin
26 wall portions having, for the most part, a generally
27 uniform thickness. The body 56 has two principal
28 sections, a box-like container section 57 and a
29 specialized implement support section 58. The
30 illustrated device 55 has an overall length (FIG. 10) of
31 about 7-5/8". Ideally, the corners of various parts of
32 the body are rounded to avoid cutting or tearing of
33 gloves worn by medical personnel. The box section 57 is
34 generally rectangular in plan view (FIG. 9) and is
35 relatively shallow by virtue of having a depth of about

1 1/5 its major length measured in the longitudinal
2 direction of the device 55, that is, the lengthwise
3 direction of the body 56. The box section 57 includes a
4 bottom wall 59, end walls 61, 62, and sidewalls 63, 64.
5 The bottom wall 59, at an area remote from the support
6 section 58, includes a pair of molded-in supports or feet
7 66 that depend downward from the bottom wall proper. A
8 lid or cover 67 is joined to one of the side walls 64
9 with a living hinge 68. The lid 67 is molded in the open
10 position of FIG. 7 and can be closed over the container
11 57 as indicated in FIG. 11. The cover 67 is large enough
12 to fully close the container 57 and is releasably locked
13 in a closed position by a resiliently deflectable latch
14 formed on a free edge 71 of the cover 67. A hole 72 in
15 the latch 69 receives a small projection 73 on a sidewall
16 63 (FIG. 8).

17 A magnetic sheet 76 (FIGS. 9, 11) is assembled on
18 the bottom wall 59 on the inside of the container or box
19 57 by suitable adhesive or other means. Printed or
20 otherwise marked on the exposed side of the magnetic
21 sheet 76 is a rectangular grid of a color contrasting
22 with the sheet that is used to count or register sharp
23 implements such as used scalpel blades and needles by
24 receiving a separate one of the implements in a single
25 one of the grid spaces. The cover 67 is preferably
26 sufficiently transparent to enable the grid and any
27 sharps on the magnetic sheet 76 to be seen therethrough.

28 The implement support section 58 has a base wall 80
29 that, as shown, can be coplanar with the bottom wall 59
30 of the box section 57. Opposed vertical walls 81
31 reinforce the base wall 80 by interconnecting it with the
32 container box section end wall 61. The base wall 80 has
33 square or rectangular apertures 82 that simplify the
34 tooling required to mold a plurality of right angle tabs
35 83. The tabs 83 serve as support feet for the device 55

1 and to resiliently grip a suture pack as described below.
2 The bottom surfaces of the tabs 83 and feet 66 are
3 preferably coplanar and are provided with double-side
4 adhesive-coated foam-like pads 84 of known construction.
5 The lower surfaces of the pads 84, ideally, have peel-
6 away release liner material which, when removed, enables
7 the device 55 to be adhered to a supporting surface such
8 as a surgical drape or table. The sidewalls 81 are
9 formed with concave areas 86 that cooperate to create a
10 wasp waist configuration adjacent the container box 57 so
11 as to produce a comfortable and secure finger grip across
12 these areas 86 (FIG. 11).

13 Finger guards 88 extend laterally from upper edges
14 of the walls 81 and longitudinally beyond the forward end
15 of these walls and the base wall 80. The finger guards
16 88 are cupped downwardly along the majority of the length
17 of their free edges 89 towards the bottom face of the
18 device, i.e. they are concave from the lower face of the
19 device 55. The free edges 89 of the finger guards remain
20 above the plane of the bottom wall 59 and coplanar base
21 wall 80 so as to not interfere with the function of the
22 feet 66 and tabs 83 for supporting the device 55 in a
23 stable manner on a flat surface.

24 At a forward end of the base wall 80 are two scalpel
25 holding locations 91 each formed by a pair of opposed
26 gripping elements in the form of upstanding or vertical
27 tabs 92. The tabs 92 lie in planes oblique to the
28 longitudinal direction of the device 55 so that the tabs
29 in a free state converge towards one another with
30 reference to the rearward direction. Edges 93 of the
31 pair tabs in a free state are spaced from one another to
32 define a gap 94. The central tabs 92 are supported on
33 fingers 96 having vertical and horizontal segments. At
34 their upper ends, the tabs 92 are formed with inclined
35 camming edges 97 such that the gap 94 between the tab

1 edges widens with increasing distance from the base wall
2 80. A space or notch 98 exists between the fingers 96
3 and extends a limited distance into the base wall 80.

4 An upstanding or vertical rib 101 near the box 57 is
5 aligned in the longitudinal direction with each gap 94.
6 As indicated, each rib 101 is formed with a lengthwise
7 deep groove 102 dividing the rib into two portions and
8 leaving only a very thin membrane of material between
9 these portions adapted to be cut by a scalpel blade.
10 Alternatively, a very narrow slot can be substituted for
11 the groove and thin membrane. At their free ends, the
12 ribs 101 each have a V-shaped notch 103 centered with the
13 respective groove 102 and forming with the groove a
14 narrow throat area for laterally confining a scalpel
15 blade. The box cover 67 has two retainer tabs 104 that
16 are located to overlies respective ones of the rib grooves
17 102 when the cover is closed over the box 57. The base
18 wall 80 is covered with a magnetic sheet 106 (FIG. 9)
19 that includes a notch with portions that straddle along
20 each side of the notch 98. The magnetic sheet 106 is
21 mounted on the box wall with adhesive or other suitable
22 means.

23 The four right angle tabs or legs 83 on the lower
24 face of the base wall 80 are arranged in opposed pairs so
25 that a longitudinal channel or receiving zone 109 is
26 bounded by them and the base wall. A commercially
27 available suture pack 110 comprising a plastic carrier
28 supporting a needle and suture thread can be assembled
29 into this receiving zone by pushing it between the tabs
30 83 and the lower surface of the base wall 80 from a
31 loading zone formed by the lower face of the container
32 box bottom wall 59 forward of the rear feet 66. A molded
33 projection 115 (FIG. 8) stops the suture pack at an
34 appropriate location. The right angle tabs or feet 83
35 are spaced from the plane of the base wall 80 so that

1 they are resiliently flexed when the pack 110 is inserted
2 and the pack is thereby reliably frictionally retained in
3 position.

4 FIG. 12 illustrates a feature of the invention where
5 the device 55 is used for presenting a suture needle 116
6 to a needle holder. As shown, the needle 116, which can
7 be drawn from the suture pack 110, is positioned in
8 straddled relation to the portion of the notch 98 in the
9 base wall 80 and a complementary notch in the magnetic
10 sheet 106. The needle 116 is held in the desired
11 location by the magnetic attraction developed by the
12 portions of the magnetic sheet 106 on opposite sides of
13 the notch 98. The nose of a needle holder partially
14 shown at 117 easily enters the area of the notch 98 and
15 grips the mid-section of the needle 116. The needle 116
16 is then simply lifted off the magnetic sheet 116 for use.

17 FIG. 11 illustrates a manner of use of the device 55
18 that affords the least change in a surgeon's paradigm in
19 being directly handed a scalpel by an attendant nurse and
20 can therefore be highly preferably over other techniques
21 and devices that avoid direct hand-to-hand exchange of
22 scalpels. One or two scalpels 111 are mounted on the
23 device 55 by forcing the scalpel blade 112 into a
24 receiving zone of the membrane created by the groove 102
25 in an associated rib 101 and beneath the tabs 104 on the
26 container cover 67. It will be understood that these
27 elements along with the box end wall 61 confine or
28 restrain the blade end of the scalpel 111 in essentially
29 all directions except forward (away from the box end wall
30 61).

31 The convergent sides of the V-shaped notches 103
32 help to direct and center the scalpel blade 112 with the
33 relevant blade rib 101 thereby facilitating action of the
34 blade cutting into the membrane at the groove 102 or the
35 alternative slot. During insertion of the scalpel blade

1 112 into the blade rib 101, the scalpel handle can be
2 held above a respective gripping slot or gap 94. With
3 the blade 112 set in the receiving zone formed by the rib
4 101, the scalpel handle, designated 113, is pushed down
5 into the gap 94 in pitch motion preferably until it abuts
6 the base wall 80 adjacent the gap. The convergent
7 camming edges 97 at the gap 94 serve as cams to spread
8 the tabs 92 to accommodate the particular width of the
9 scalpel handle 113. A study of FIG. 9 shows that the
10 vertical tabs 92 are oriented so that only their edges 93
11 engage the handle 113. The tab edges 93 are sharp enough
12 to interengage with and grip typical serrations or ribs
13 114 on the scalpel handle 113. Because the tabs 92 are
14 oblique to the longitudinal direction, they work like
15 finger traps and prevent forward longitudinal movement of
16 the scalpel, i.e. movement away from the container or box
17 57.

18 Because the grip of the tabs 92 is secure and
19 reliable, the device 55 can be held upright or nearly
20 upright (FIG. 11) by an attending nurse for presentation
21 to a surgeon during an operation without the risk of a
22 scalpel accidentally slipping out of the device. The
23 scalpel 111 is simply retrieved from the device by
24 pulling the handle 113 upwardly or away from the plane of
25 the base wall 80, in pitch motion, so that the handle
26 slides out of the gap 94 in a direction perpendicular to
27 the base wall. It will be understood that the device 55
28 can alternatively be supported horizontally by a nurse or
29 a support surface, and the scalpel 111 will be safely and
30 securely held with the handle in cantilever relation to
31 the support section 58 with its mid-section resting on
32 the base wall 80.

33 The device 55 is ergonomically configured so that it
34 can be securely gripped by the fingers of the nurse such
35 as in the situation depicted in FIG. 11. The exterior of

1 the walls 81, and, if desired, most or all of the
2 remaining exterior of the body 56, except the cover 67,
3 is formed with a non-slip surface by suitable surface
4 treatment of the mold. Such body surfaces, preferably,
5 have as a minimum surface roughness that which is formed
6 by a vapor hone mold surface. The wasp waist section
7 afforded by the concave areas 86 provides a secure grip
8 between the thumb and a finger or fingers. The
9 downwardly cupped edges 89 of the finger guards 88
10 automatically enable the person holding the device to
11 locate his or her fingers so that they remain behind the
12 guards 88. The cupped area on the forward end of the
13 flanges or guards 88 is especially effective in receiving
14 and constraining the small finger or pinky. Note that
15 the finger guards are similarly useful when originally
16 placing or replacing a scalpel on the device. With a
17 person's fingers protected by the guards, the risk of an
18 accidental stick or cut is effectively eliminated.

19 While the invention has been shown and described
20 with respect to particular embodiments thereof, this is
21 for the purpose of illustration rather than limitation,
22 and other variations and modifications of the specific
23 embodiments herein shown and described will be apparent
24 to those skilled in the art all within the intended
25 spirit and scope of the invention. Accordingly, the
26 patent is not to be limited in scope and effect to the
27 specific embodiments herein shown and described nor in
28 any other way that is inconsistent with the extent to
29 which the progress in the art has been advanced by the
30 invention.